IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: K. MOGI, et al

Serial No.: 10/633,637

Filed: August 5, 2003

For: COMPUTER SYSTEM FOR MANAGING PERFORMANCES OF STORAGE APPARATUS AND PERFORMANCE MANAGEMENT METHOD OF THE COMPUTER SYSTEM

PETITION TO MAKE SPECIAL
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII

MS Petition
Commissioner for Patents   September 16, 2004
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Petition

Applicants hereby petition to make this application **Special**, in accordance with 37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application filed in the United States Patent and Trademark Office on August 5, 2003 and as such has not received any examination by the Examiner.

2. Claims

Applicants hereby represent that all the claims in the present application are directed to a single invention. If upon examination it is determined that all the claims presented are not directed to a single invention, Applicants will make an election without traverse as a prerequisite to the granting of special status.

-1-

3. Search

Applicants hereby submit that a pre-examination search, a copy of which is attached, has been made by a professional searcher.

The field of search covered Class 711, subclasses 114, 119, 129, 136 and 167. Additionally, a computer database search was conducted on the USPTO systems EAST and WEST and a keyword search was also conducted in Class 707, subclasses 1, 2, 3, 4, 10, 200 and 201; Class 709, subclasses 20 and 203 and Class 711, subclasses 100, 112 and 113.

The above subclasses represent areas deemed to contain subject matter of interest to one or more of the search features. Please note that relevant references may be classified outside of these areas. The integrity of the search is based on the records as presented to us by the United States Patent and Trademark Office (USPTO). No further integrity studies were performed. Also a key word search was performed on the USPTO full-text database including published U.S. patent applications.

4. Copy of References

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

5. Detailed Discussion of the References and Distinctions Between the References and the Claims

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject matter encompassed by the claims of the present application, and which discussion particularly

points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

a.   Detailed Discussion of the References

Hirata et al (U.S. Patent Application No. 2004/0024870) shows in Figs. 1 and 2 a storage network system, managing apparatus, managing method and program. The managing computer 101 includes a management target composing information collection function 109 that collects information concerning attribute information of each device and connection relation among devices from a target storage system 102 to be managed, a traffic information collection function (110) that collects information of data traffic amount of each connection port of each equipment, a managing information database 106 that stores and manages the collected management target composing information and traffic information, a bottleneck analyzing function 105 that searches a performance bottleneck section based on the management and sends notice of the result of the search, a path switching judging function 103 that sets an appropriate switching method for leveling off the load of the target storage system based on the results of the search performed by the bottleneck analyzing function, and a path switching function 105' that instructs the target storage system to be managed to switch the paths. See Figs. 1 and 2, abstract and sections [0035]-[0036] and [0058] – [0060].

Eguchi et al U.S. Patent Application No. 2003/0221063) shows in Figs. 1 and 2 a method and apparatus for data relocation between storage subsystems. The internal storage unit of the storage control unit 190 stores therein LU/logical/physical-related

information 173, logical area use information 176, physical area use information 177, logical storage unit management information 178, physical storage unit management information 179 and storage unit performance information 180. See Figs. 1, 2 and 14-16 and sections [0022]-0053] and [0071 – 0079].

Kataoka et al (U.S. Patent Application No. 2003/0225830) shows in Figs. 1-3 and 15 a performance measuring system for storage network. A performance-measuring server 7 is connected to the IP network. Measurement data is collected from DB servers 2a-b with measuring functions and from routers 6a-d and clients 1a-b, and evaluation and analysis of the storage network system (a whole system from client servers to the storages) are performed. See Figs. 1-3 and 15, abstract and sections [0037]-[0039], [0042] - [0054] and [0078] – [0080].

Nakamura et al (U.S. Patent Application No. 2003/0061331) shows in Figs. 1-3 a data storage system and control method thereof. The data storage system comprises a management server part 30 which includes a configuration information database 321,; wherein the management server part 30 is connected to external storage systems 20 and accumulates event information of the external storage systems via an external connection interface 34 into the configuration information database 321, and connected to host computers 10 and accumulates host logical configuration information of the host computers 10 via a network 50, in point of time series. See Figs. 1-3, sections [0028 – [0067], and claims 1-20.

b.   Distinctions Between the References and the Claims

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with

each other or in combination with any of the other references now of record.

The present invention as now recited in the claims is directed to a performance management method for a computer system having a computer for executing a program and a storage apparatus for storing data used during execution of the program. According to the present invention, a first procedure is conducted for acquiring information regarding performance required for the program being executed, a second procedure is performed for acquiring mapping information of the data used in execution of the program from the computer and the storage apparatus, a third procedure is performed for acquiring utilization statistic information from the storage apparatus, a fourth procedure is performed for creating a plan to change setting of the storage apparatus by using the information acquired by the first, second and third procedures, and a fifth procedure is performed for issuing a request for a setting change according to the created plan to change settings of the storage apparatus.

The above described features of the present invention particularly the second, third and fourth procedures described above are not taught or suggested by any of the references of record whether taken individually or in combination with each other.

For example, Hirata teaches a storage network system wherein a managing computer collects attribute information of each device and connection relation among the devices from the target storage system and collects information of data traffic amount of each connection port of each equipment, and based on such collected information, sets an appropriate switching method for the target storage system to be managed so as to level off the load between the devices included in

-5-

the target storage system. The present invention as recited in the claims differs from Hirata being that according to the present invention upon acquiring mapping and utilization statistic information, a plan is created to change the settings of the storage apparatus based on the acquired information. There is no teaching or suggestion in Hirata that the settings of the storage apparatus are changed based on the above described collected information. Hirata simply describes that the switching paths are modified based upon collected information. Therefore, the features of the present invention as recited in the claims are not taught or suggested by Hirata.

The above described deficiencies of Hirata also exist in each of the other references described above and the other references of record. Therefore, Applicants submit that the above described references and the other references of record whether taken individually or in combination with each other fails to teach or suggest the features of the present invention as recited in the claims.

6.   Fee (37 C.F.R. 1.17(i))

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X]   the Credit Card Payment Form (attached) for $130.00.

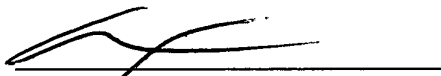[   ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (520.43012X00)

Respectfully submitted,

Antonelli, Terry, Stout & Kraus, LLP

Carl I. Brundidge
Registration No. 29,621

CIB/jdc
Enclosures

-7-

July 16, 2004

Mr. Noboru Otsuka
HITACHI LTD, INTELLECTUAL PROPERTY GROUP
IP Development & Management Division, Patent Dept 4
292, Yoshida-cho, Totsuka-ku, Yokohama-shi
Kanagawa 244-0817 Japan

> RE: Petition-To-Make-Special Search
> For: **COMPUTER SYSTEM FOR MANAGING PERFORMANCES OF STORAGE APPARATUS AND PERFORMANCE MANAGEMENT METHOD OF THE COMPUTER SYSTEM**
> **U.S. APPLICATION NO. 10/633637**
> Your Ref. No.: 340300317US01
> Our Ref. No.: HIT 1085

Dear Mr. Otsuka:

We have completed the petition-to-make-special search at the U.S. Patent and Trademark Office regarding the above-identified invention. The field of search covered Class 711, subclasses 114, 119, 129, 136 and 167. Additionally, a computer database search was conducted on the USPTO systems EAST and WEST; and a keyword search was also conducted in Class 707, subclasses 1, 2, 3, 4, 10, 200 and 201; Class 709, subclasses 20 and 203 and Class 711, subclasses 100, 112 and 113. Examiner Mano Padmanabhan in Class 711 (Art Unit 2188) was consulted in confirming the field of search.

The search was directed towards a computer system for managing performances of storage apparatus and performance management method of the computer system. In particular, the search was directed towards a performance management method providing for a computer system having a computer for executing a program and storage apparatus for storing data used in execution of the program. Additionally, computer system and the performance management method which utilize the processing performance requirement settings specified by an administrator for adjustment of the performance of the storage apparatuses in the computer system to obtain the preferable performance of the computer system where a large-scale Database Management System operates, and as further claimed and described in the disclosure. Note we limited our search to U.S. patents having a filing date and foreign patents and literature having a publication date prior to August 5, 2003.

Please note the enclosed documents listed in numerical order for convenience:

U.S. Patent Number	Inventor(s)
5,325,505	Hoffecker et al.
5,584,018	Kamiyama
6,260,114	Schug
6,341,331	McNutt
6,505,248	Casper et al.
6,760,828	Black

Published Patent Application	Inventor(s)
2003/0061331	Nakamura et al.
2003/0084071	Lulo
2003/0093442	Mogi et al.
2003/0093619	Sugino et al.
2003/0158920	Lynch et al.
2003/0221063	Eguchi et al.
2003/0225830	Kataoka et al.
2003/0229698	Furuhashi et al.
2004/0024796	Takeda et al.
2004/0024870	Hirata et al.
2004/0117398	Idei et al.
2004/0127999	Murase et al.

Foreign Patent Number	Inventor(s)
JP2001067187	Arakawa et al.

Brief Description Of The Documents:

U.S. Patent Application Number 2004/0024870 shows a storage network system, managing apparatus, managing method and program. The managing computer (101) is composed of a management target composing information collection function (109) that collects information concerning attribute information of each device and connection relation among devices from a target system to be managed, a traffic information collection function (110) that collects information of data traffic amount of each connection port of each equipment, a managing information database (106) that stores and manages the collected management target composing information and traffic information, a bottleneck analyzing function (105) that searches a performance bottleneck section based on the management information, a path switching judging function (103) that sets an appropriate switching method for leveling off the load for the bottleneck section, and a path switching function (105') that instructs target equipments to be managed to switch the paths. See figures, abstract and section [0035]-[0036].

K&A

U.S. Patent Application Number 2003/0221063 shows a method and apparatus for data relocation between storage subsystems. The internal storage unit of the storage control unit (190) stores therein LU/logical/physical-related information (173), logical area use information (176), physical area use information (177), logical storage unit management information (178), physical storage unit management information (179) and storage unit performance information (180). See figures and section [0022]-[0053].

U.S. Patent Application Number 2003/0225830 shows a performance measuring system for storage network. A performance-measuring server (7) is connected to the IP network. Measurement data is collected from DB servers with measuring functions and from routers and clients, and evaluation and analysis of the storage network system (a whole system from client servers to the storages) are performed. See figure, abstract and section [0037]-[0039].

U.S. Patent Application Number 2003/0061331 shows a data storage system and control method thereof. The data storage system comprises a management server part as its part; and a configuration information database; wherein the part is connected to said external storage systems and accumulates event information of said multiple external storage systems via said external connection interface into said configuration information database, and the part is connected to said computers and accumulates host logical configuration information of said multiple computers via said network, in point of time series. See figures and claims 1-20.

The remaining documents are of general interest for showing computer systems for managing performance of storage apparatuses.

While the above-noted Examiner was consulted and confirmed our opinion that the most relevant areas for this invention were reviewed, further searching may uncover additional patents. NOTE: The field of search included the most pertinent areas identified by the Examiner and our office as containing relevant patents.

Enclosed are copies of the cited documents and our invoice for services rendered and disbursements for this matter. NOTE: Patent Numbers and publications provided with the search request have not been included in this search report.
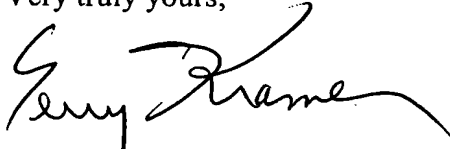
Mr. Noboru Otsuka
July 16, 2004
Page Four

      As always, if you have any questions regarding this search, please do not hesitate to call us at (703) 413-5000.

Very truly yours,

Terry W. Kramer
Direct Dial (703) 413-3674
E-mail: terry@kramerip.com

TWK:RCP:css
Enclosure

K&A